IN THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF OKLAHOMA

STATE OF OKLAHOMA,)
Plaintiff,)
v.) Case No. 05-CV-00329-GKF-SAJ
TYSON FOODS, INC., et al.,)
Defendants.)

STATE OF OKLAHOMA'S RESPONSES TO TYSON FOODS, INC.'S APRIL 17, 2008 REQUESTS FOR PRODUCTION TO THE STATE OF OKLAHOMA

COMES NOW, the Plaintiff, the State of Oklahoma, ex rel. W.A. Drew Edmondson, in his capacity as Attorney General of the State of Oklahoma, and Oklahoma Secretary of the Environment, C. Miles Tolbert, in his capacity as the Trustee for Natural Resources for the State of Oklahoma under CERCLA, (hereinafter "the State") and hereby responds to Tyson Foods, Inc.'s, April 17, 2008 Request for Production. The State reserves the right to supplement these responses.

GENERAL OBJECTIONS

- The State objects to these discovery requests to the extent that they seek the 1. discovery of information that is protected by the attorney-client privilege, the work product doctrine or any other applicable privilege or protection under state or federal law.
- The State objects to these discovery requests to the extent that they seek the 2. discovery of information that is already in the possession of Defendant Tyson Foods, Inc. ("Tyson"), is obtainable from another source that is more convenient, less burdensome or less expensive, or is as accessible to Defendant Tyson as it is to the State. As such, the burden of obtaining such sought-after information is substantially the same, or less, for the Defendant



Tyson as it is for the State.

- 3. The State objects to these discovery requests to the extent that they are overly broad, oppressive, unduly burdensome and expensive to answer. Providing answers to such discovery requests would needlessly and improperly burden the State. The State particularly objects because certain of these requests seek computer programs, functions and procedures which are not in the possession of the State, nor under its control, and which are proprietary or owned by or licensed to third parties not under the control of the State, rendering their production impossible, or oppressive, unduly burdensome and expensive for the State.
- 4. The State objects to these discovery requests to the extent that they improperly seek identification of "all" documents for each request. Such discovery requests are thus overly broad and unduly burdensome. It may be impossible to locate "all" documents or each item of responsive information to such discovery requests.
- 5. The State objects to these discovery requests to the extent that the discovery sought is unreasonably cumulative or duplicative.
- 6. The State objects to these discovery requests to the extent that they do not state with the required degree of specificity and particularity what information is being sought to be admitted or denied. As such, such discovery requests are vague, indefinite, ambiguous and not susceptible to easily discernible meaning, requiring the State to guess as to what it is admitting or denying, or to admit or deny a statement readily susceptible to alternative interpretations.
- 7. The State objects to these discovery requests to the extent that the burden or expense of the proposed discovery outweighs its likely benefit, taking into account the needs of the case, the amount in controversy, the parties' resources, and the importance of the proposed discovery in resolving the issues.

- 8. The State objects to these discovery requests to the extent that they improperly attempt to impose obligations on the State other than those imposed by the Federal Rules of Civil Procedure.
- 9. The State objects to the instructions set forth in these discovery requests to the extent that they improperly expand or alter the obligations imposed by the Federal Rules of Civil Procedure. The State objects to the definitions of these discovery requests to the extent that they improperly attempt to alter the plain meaning of certain words.
- 10. By submitting these responses, the State does not acknowledge that the requested information is necessarily relevant or admissible. The State expressly reserves the right to object to further discovery into the subject matter of any information provided and to the introduction of such information into evidence.
- 11. The State objects to the definition of "You," "your" or "yourself" to the extent that it is intended to mean anything other than the State of Oklahoma. There is only one Plaintiff.

RESPONSES TO REQUESTS FOR PRODUCTION

REQUEST FOR PRODUCTION NO. 1: Please produce all Models relating to the IRW created in connection with This Matter and/or which You intend to rely upon in This Matter.

RESPONSE TO REQUEST NO. 1: The State incorporates its general objections as if fully stated herein. The State objects to this request to the extent it seeks information protected by the attorney client privilege or work product protection. Further, the State objects to this request to the extent that it seeks information known or opinions held by expert consultants retained or specially employed by the State or by its counsel in anticipation of litigation or preparation for trial. Fed. R. Civ. P. 26(b)(4)(A) and (B). The State and its experts are still collecting and analyzing the information and data which will be used in their opinions and

reports, including any supplements thereto. The State objects to any production of expert opinions and materials prior to the applicable dates set by the Court's Scheduling Order.

The State also objects to this request on the ground that it improperly seeks identification of all items of responsive information, which renders it overly broad, unduly burdensome and oppressive. It may be impossible to locate all items of information responsive to this request. Additionally, the State objects to this Request on the ground that it is improper, overbroad, unduly burdensome, duplicative of other discovery requests and premature.

The State further objects that this request is vague and ambiguous in that it is not reasonably possible to determine what is requested as a Model, defined as a "computerized, mathematical representation of a system."

Subject to and without waiver of any objection, the State will identify / produce nonprivileged, non-protected information that is responsive to this request, to the extent it is reasonably available to the State, after the disclosure of the applicable expert reports. The State reserves the right to supplement its response to this request.

REQUEST FOR PRODUCTION NO. 2: Please produce all input files used in the Models.

The State incorporates its general objections as if **RESPONSE TO REQUEST NO. 2:** fully stated herein. The State objects to this request to the extent it seeks information protected by the attorney client privilege or work product protection. Further, the State objects to this request to the extent that it seeks information known or opinions held by expert consultants retained or specially employed by the State or by its counsel in anticipation of litigation or preparation for trial. Fed. R. Civ. P. 26(b)(4)(A) and (B). The State and its experts are still collecting and analyzing the information and data which will be used in their opinions and reports, including any supplements thereto. The State objects to any production of expert opinions and materials prior to the applicable dates set by the Court's Scheduling Order.

The State also objects to this request on the ground that it improperly seeks identification of all items of responsive information, which renders it overly broad, unduly burdensome and oppressive. It may be impossible to locate all items of information responsive to this request. Additionally, the State objects to this Request on the ground that it is improper, overbroad, unduly burdensome, duplicative of other discovery requests and premature.

The State further objects that this request is vague and ambiguous in that it is not reasonably possible to determine what is requested as a Model, defined as a "computerized, mathematical representation of a system." The State further objects to the term "input file" as it is vague and ambiguous and susceptible to various meanings and interpretations.

Subject to and without waiver of any objection, the State will identify / produce non-privileged, non-protected information that is responsive to this request, to the extent it is reasonably available to the State, after the disclosure of the applicable expert reports. The State reserves the right to supplement its response to this request.

REQUEST FOR PRODUCTION NO. 3: Please produce all output files produced by the Models.

RESPONSE TO REQUEST NO. 3: The State incorporates its general objections as if fully stated herein. The State objects to this request to the extent it seeks information protected by the attorney client privilege or work product protection. Further, the State objects to this request to the extent that it seeks information known or opinions held by expert consultants retained or specially employed by the State or by its counsel in anticipation of litigation or preparation for trial. Fed. R. Civ. P. 26(b)(4)(A) and (B). The State and its experts are still

collecting and analyzing the information and data which will be used in their opinions and reports, including any supplements thereto. The State objects to any production of expert opinions and materials prior to the applicable dates set by the Court's Scheduling Order.

The State also objects to this request on the ground that it improperly seeks identification of all items of responsive information, which renders it overly broad, unduly burdensome and oppressive. It may be impossible to locate all items of information responsive to this request. Additionally, the State objects to this Request on the ground that it is improper, overbroad, unduly burdensome, duplicative of other discovery requests and premature.

The State further objects that this request is vague and ambiguous in that it is not reasonably possible to determine what is requested as a Model, defined as a "computerized, mathematical representation of a system." The State further objects to the term "output file" as it is vague and ambiguous and susceptible to various meanings and interpretations.

Subject to and without waiver of any objection, the State will identify / produce non-privileged, non-protected information that is responsive to this request, to the extent it is reasonably available to the State, after the disclosure of the applicable expert reports. The State reserves the right to supplement its response to this request.

REQUEST FOR PRODUCTION NO. 4: Please produce all computer codes used in the Models.

RESPONSE TO REQUEST NO. 4: The State incorporates its general objections as if fully stated herein. The State objects to this request to the extent it seeks information protected by the attorney client privilege or work product protection. Further, the State objects to this request to the extent that it seeks information known or opinions held by expert consultants retained or specially employed by the State or by its counsel in anticipation of litigation or

preparation for trial. Fed. R. Civ. P. 26(b)(4)(A) and (B). The State and its experts are still collecting and analyzing the information and data which will be used in their opinions and reports, including any supplements thereto. The State objects to any production of expert opinions and materials prior to the applicable dates set by the Court's Scheduling Order.

The State also objects to this request on the ground that it improperly seeks identification of all items of responsive information, which renders it overly broad, unduly burdensome and oppressive. It may be impossible to locate all items of information responsive to this request. Additionally, the State objects to this Request on the ground that it is improper, overbroad, unduly burdensome, duplicative of other discovery requests and premature.

The State further objects that this request is vague and ambiguous in that it is not reasonably possible to determine what is requested as a Model, defined as a "computerized, mathematical representation of a system." The State further objects that this request is vague and ambiguous in that it is not reasonably possible to determine what is requested as a "computer code." The State particularly objects because certain of these requests seek "computer codes" which are not in the possession of the State, nor under its control, and which are proprietary, copyrighted or owned by or licensed to third parties not under the control of the State, rendering their production impossible, or oppressive, unduly burdensome and expensive for the State.

Subject to and without waiver of any objection, the State will identify / produce non-privileged, non-protected information that is responsive to this request, to the extent it is reasonably available to the State, after the disclosure of the applicable expert reports. The State reserves the right to supplement its response to this request.

REQUEST FOR PRODUCTION NO. 5: Please produce all pre-processing computer programs, functions and procedures used.

RESPONSE TO REQUEST NO. 5: The State incorporates its general objections as if fully stated herein. The State objects to this request to the extent it seeks information protected by the attorney client privilege or work product protection. Further, the State objects to this request to the extent that it seeks information known or opinions held by expert consultants retained or specially employed by the State or by its counsel in anticipation of litigation or preparation for trial. Fed. R. Civ. P. 26(b)(4)(A) and (B). The State and its experts are still collecting and analyzing the information and data which will be used in their opinions and reports, including any supplements thereto. The State objects to any production of expert opinions and materials prior to the applicable dates set by the Court's Scheduling Order.

The State also objects to this request on the ground that it improperly seeks identification of all items of responsive information, which renders it overly broad, unduly burdensome and oppressive, especially since this request is not limited to "pre-processing computer codes" used in "the Models" or otherwise limited. It may be impossible to locate all items of information responsive to this request. Additionally, the State objects to this Request on the ground that it is improper, overbroad, unduly burdensome, duplicative of other discovery requests and premature.

The State further objects that this request is vague and ambiguous in that it is not reasonably possible to determine what is requested as a Model, defined as a "computerized, mathematical representation of a system." The State further objects that this request is vague and ambiguous in that it is not reasonably possible to determine what is requested as "pre-processing computer programs, functions and procedures used." The State particularly objects because certain of this requests seeks "pre-processing computer programs, functions and procedures used" which are not in the possession of the State, nor under its control, and which are proprietary, copyrighted or owned by or licensed to third parties not under the control of the

State, rendering their production impossible, or oppressive, unduly burdensome and expensive for the State.

The State further objects to producing proprietary, commercially or publically available programs.

Subject to and without waiver of any objection, the State will identify / produce non-privileged, non-protected information that is responsive to this request, to the extent it is reasonably available to the State, after the disclosure of the applicable expert reports. The State reserves the right to supplement its response to this request.

REQUEST FOR PRODUCTION NO. 6: Please produce all post-processing computer programs, functions and procedures used.

RESPONSE TO REQUEST NO. 6: The State incorporates its general objections as if fully stated herein. The State objects to this request to the extent it seeks information protected by the attorney client privilege or work product protection. Further, the State objects to this request to the extent that it seeks information known or opinions held by expert consultants retained or specially employed by the State or by its counsel in anticipation of litigation or preparation for trial. Fed. R. Civ. P. 26(b)(4)(A) and (B). The State and its experts are still collecting and analyzing the information and data which will be used in their opinions and reports, including any supplements thereto. The State objects to any production of expert opinions and materials prior to the applicable dates set by the Court's Scheduling Order.

The State also objects to this request on the ground that it improperly seeks identification of all items of responsive information, which renders it overly broad, unduly burdensome and oppressive. It may be impossible to locate all items of information responsive to this request.

Additionally, the State objects to this request on the ground that it is improper, overbroad, unduly burdensome, duplicative of other discovery requests and premature.

The State further objects that this request is vague and ambiguous in that it is not reasonably possible to determine what is requested as a Model, defined as a "computerized, mathematical representation of a system." The State also objects to this request on the ground that it improperly seeks identification of all items of responsive information, which renders it overly broad, unduly burdensome and oppressive, especially since this request is not limited to "post-processing computer codes" used in "the Models" or otherwise. limited. It may be impossible to locate all items of information responsive to this request. Additionally, the State objects to this Request on the ground that it is improper, overbroad, unduly burdensome, duplicative of other discovery requests and premature.

The State further objects that this request is vague and ambiguous in that it is not reasonably possible to determine what is requested as "post-processing computer programs, functions and procedures used." The State particularly objects because certain of these requests seeks "post-processing computer programs, functions and procedures used" which are not in the possession of the State, nor under its control, and which are proprietary, copyrighted or owned by or licensed to third parties not under the control of the State, rendering their production impossible, or oppressive, unduly burdensome and expensive for the State.

The State further objects to producing proprietary, commercially or publically available programs because such programs are as readily available to Defendant Tyson as to the State and production by the State is unduly burdensome and expensive.

Subject to and without waiver of any objection, the State will identify / produce non-privileged, non-protected information that is responsive to this request, to the extent it is

reasonably available to the State, after the disclosure of the applicable expert reports. The State reserves the right to supplement its response to this request.

REQUEST FOR PRODUCTION NO. 7: Please produce all computer programs, functions and procedures used.

RESPONSE TO REQUEST NO. 7: The State incorporates its general objections as if fully stated herein. The State objects to this request to the extent it seeks information protected by the attorney client privilege or work product protection. Further, the State objects to this request to the extent that it seeks information known or opinions held by expert consultants retained or specially employed by the State or by its counsel in anticipation of litigation or preparation for trial. Fed. R. Civ. P. 26(b)(4)(A) and (B). The State and its experts are still collecting and analyzing the information and data which will be used in their opinions and reports, including any supplements thereto. The State objects to any production of expert opinions and materials prior to the applicable dates set by the Court's Scheduling Order.

The State also objects to this request on the ground that it improperly seeks identification of all items of responsive information, which renders it overly broad, unduly burdensome and oppressive. It may be impossible to locate all items of information responsive to this request. Additionally, the State objects to this request on the ground that it is improper, overbroad, unduly burdensome, duplicative of other discovery requests and premature.

The State also objects to this request on the ground that it improperly seeks identification of all items of responsive information, which renders it overly broad, unduly burdensome and oppressive, especially since this request is not limited to "computer programs, functions and procedures" used in "the Models," or otherwise limited. It may be impossible to locate all items of information responsive to this request. Additionally, the State objects to this Request on the

ground that it is improper, overbroad, unduly burdensome, duplicative of other discovery requests and premature.

The State further objects that this request is vague and ambiguous in that it is not reasonably possible to determine what is requested as "computer programs, functions and procedures used." The State particularly objects because certain of these requests seeks "computer programs, functions and procedures used" which are not in the possession of the State, nor under its control, and which are proprietary, copyrighted or owned by or licensed to third parties not under the control of the State, rendering their production impossible, or oppressive, unduly burdensome and expensive for the State.

The State further objects to producing proprietary, commercially or publically available programs because such programs are as readily available to Defendant Tyson as to the State and production by the State is unduly burdensome and expensive.

Subject to and without waiver of any objection, the State will identify / produce non-privileged, non-protected information that is responsive to this request, to the extent it is reasonably available to the State, after the disclosure of the applicable expert reports. The State reserves the right to supplement its response to this request.

REQUEST FOR PRODUCTION NO. 8: Please produce all primary data used to develop the Models' input files.

RESPONSE TO REQUEST NO.8: The State incorporates its general objections as if fully stated herein. The State objects to this request to the extent it seeks information protected by the attorney client privilege or work product protection. Further, the State objects to this request to the extent that it seeks information known or opinions held by expert consultants retained or specially employed by the State or by its counsel in anticipation of litigation or

preparation for trial. Fed. R. Civ. P. 26(b)(4)(A) and (B). The State and its experts are still collecting and analyzing the information and data which will be used in their opinions and reports, including any supplements thereto. The State objects to any production of expert opinions and materials prior to the applicable dates set by the Court's Scheduling Order.

The State also objects to this request on the ground that it improperly seeks identification of all items of responsive information, which renders it overly broad, unduly burdensome and oppressive. It may be impossible to locate all items of information responsive to this request. Additionally, the State objects to this request on the ground that it is improper, overbroad, unduly burdensome, duplicative of other discovery requests and premature.

The State further objects that this request is vague and ambiguous in that it is not reasonably possible to determine what is requested as a Model, defined as a "computerized, mathematical representation of a system." The State further objects to the term "input file" as it is vague and ambiguous and susceptible to various meanings and interpretations.

The State further objects that this request is vague and ambiguous in that it is not reasonably possible to determine what is requested as "primary data."

Subject to and without waiver of any objection, the State will identify / produce non-privileged, non-protected information that is responsive to this request, to the extent it is reasonably available to the State, after the disclosure of the applicable expert reports. The State reserves the right to supplement its response to this request.

REQUEST FOR PRODUCTION NO. 9: Please produce all primary data used for comparison with the Models' computations.

RESPONSE TO REQUEST NO. 9: The State incorporates its general objections as if fully stated herein. The State objects to this request to the extent it seeks information protected

by the attorney client privilege or work product protection. Further, the State objects to this request to the extent that it seeks information known or opinions held by expert consultants retained or specially employed by the State or by its counsel in anticipation of litigation or preparation for trial. Fed. R. Civ. P. 26(b)(4)(A) and (B). The State and its experts are still collecting and analyzing the information and data which will be used in their opinions and reports, including any supplements thereto. The State objects to any production of expert opinions and materials prior to the applicable dates set by the Court's Scheduling Order.

The State also objects to this request on the ground that it improperly seeks identification of all items of responsive information, which renders it overly broad, unduly burdensome and oppressive. It may be impossible to locate all items of information responsive to this request. Additionally, the State objects to this request on the ground that it is improper, overbroad, unduly burdensome, duplicative of other discovery requests and premature.

The State further objects that this request is vague and ambiguous in that it is not reasonably possible to determine what is requested as a Model, defined as a "computerized, mathematical representation of a system." The State further objects that this request is vague and ambiguous in that it is not reasonably possible to determine what is requested as "primary data."

Subject to and without waiver of any objection, the State will identify / produce non-privileged, non-protected information that is responsive to this request, to the extent it is reasonably available to the State, after the disclosure of the applicable expert reports. The State reserves the right to supplement its response to this request.

Respectfully Submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on this <u>19th</u> day of <u>May</u>, 2008, I electronically transmitted the above and foregoing pleading to the Clerk of the Court using the ECF System for filing and a transmittal of a Notice of Electronic Filing to the following ECF registrants:

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Also on this $\underline{19^{th}}$ day of May, 2008, I mailed a copy of the above and foregoing pleading to the following:

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Dustin McDaniel

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Office of the Attorney General (Little Rock) 323 Center Street, Suite 200 Little Rock, AR 72201-2610

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George R. Stubblefield

HC 66, Box 19-12 Proctor, Ok 74457

Robert A. Nance

Ward, Liza

From: Bond, Michael R. [Michael.Bond@KutakRock.com]

Sent: Friday, May 30, 2008 5:14 PM

To: David Page; robert.george@tyson.com; Jay Jorgensen

Cc: Kelly.Burch@oag.ok.gov; lbullock@bullock-blakemore.com; David Riggs; Baker, Fred; Ward, Liza;

Bob Nance; Richard Garren; Xidis, Claire; Bob Nance

Subject: RE: Tyson RFP Concerning Modeling Documents

David, per your suggestion on our call on Wednesday I have discussed with our experts what they need with respect to Plaintiffs' Models. First and foremost they need a working copy of each of the Models utilized by your experts. In layman's terms they need the working version of the Models that Plaintiffs' experts actually sat down and used. This is covered under Tyson Foods, Inc. April 17, 2008 Request for Production No. 1.

Additionally the following information must be provided.

- Model code files required to create all model executable files
- Model code compilation files and full documentation of the compilation options/specifications
- Model executables required to run the models for all applications included in the expert reports

transport Notice and Control

- Model input and output files for the model calibrations
- Model input and output files for the model validations
- Model input and output files for all sensitivity and uncertainty analyses conducted
- Model input and output files for all forecast scenarios
- Pre-processors used for all model inputs including: source codes, compilation options, executables, and all databases/spreadsheets required for pre-processing of the model inputs
- Processors used for model calibration and validation data including: source codes, compilation options, executables, databases, and spreadsheets
- Post-processors used for model outputs including: source codes, compilation options, and executables
- Databases/spreadsheets required to conduct post-processing of model output for calibration, validation, uncertainty/sensitivity analysis, and forecast scenarios
- Post-processed files from all model runs including calibration, validation, sensitivity/uncertainty analysis, and forecast scenarios
- Text files, databases and spreadsheets used for evaluating and presenting results from these postprocessed files

All of the above information is covered by the April 17, 2008 Requests for Production and must be produced. At this time I have not been provided with all the requested information. Please advise as to when you intend to

PLAINTIFF'S EXHIBIT

complete this production.

Michael R. Bond Kutak Rock LLP The Three Sisters Building 214 West Dickson Street Fayetteville, AR 72701-5221 Main Telephone: (479) 973-4200 Direct: (479) 695-1946

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From: David Page [mailto:dpage@riggsabney.com]

Sent: Thursday, May 29, 2008 8:12 AM

To: Bond, Michael R.; robert.george@tyson.com

Cc: Kelly.Burch@oaq.ok.gov; Ibullock@bullock-blakemore.com; David Riggs; Baker, Fred; Ward, Liza; Bob Nance;

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Subject: Tyson RFP Concerning Modeling Documents

Pursuant to our call yesterday, I can confirm that all of the "documents" responsive to the above referenced request for production (RFP) concerning the modeling information should be included in the "considered materials" produced with Dr Engel's and Dr Wells' expert reports. In order to hopefully avoid any confusion as to which of the considered documents are responsive to each individual request, next week, I will prepare a supplemental response to these requests that will include a separate production, (that we believe is a duplicate of the items produced in the considered materials) on discs or DVDs that will separately identify and include (by file name on the disc and by RFP number) the requested documents that the State or its experts (Engel and Wells) have that are responsive to each of your RFPs.

Please call if you have any questions.

Thanks, David.

David P. Page

Riggs, Abney, Neal, Turpen, Orbison & Lewis, Inc.

Tulsa, OK 74119-1010
918-587-3161
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GREGORY W ALBERTY

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June 13, 2008

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VIA EMAIL: (Michael.Bond@KutakRock.com)

Michael R. Bond, Esq. Kutak Rock LLP The Three Sisters Building 214 W. Dickson Street Fayetteville, AR 72701-5221

> Tyson Request for Production of Documents Concerning Modeling Documents Re:

Dear Michael:

This letter is written pursuant to our recent emails and telephone calls and in particular in response to the email you sent on May 30, 2008 (see attached). Based on our discussions, I understand that you wanted supplemental responses to Defendant Tyson Foods, Inc.'s April 17, 2008 Requests for Production to Plaintiff's ("Model RFPs") and that you wanted these supplemental responses to identify responsive documents by each separate request for the water quality models used by Drs. Engel and Wells. As noted below, these materials were produced as part of their considered materials along with their expert reports. The models were not disaggregated - all model runs were produced as kept in their respective directory/folder as they were stored on the expert's computers so that any experienced WQ Modeler should be able to run them as they were used by the experts.

The following should answer your questions regarding the Model RFPs and your May 30th email.

Request for Production No. 1: Please produce all Models relating to the IRW created in connection with this matter and/or which you intend to rely upon in this matter.

Supplemental Response to Request No. 1:

Dr. Engel's Models: Dr. Engel used two (2) models. The LOADEST Model and Model documentation was provided in his expert considered materials under the

file folder named "y:\Engel\Materials\il_river_note\loadest\LOADEST\folder". The GLEAMS model and model documentation was provided in his expert considered materials in the folder "y:\engel\Materials\GLEAMS\Model\Source Code\folder". The GLEAMS executables are also in each of the scenario sub watershed folders described in the Supplemental Response to Request No. 2 (below). The routing equations are described in Appendix D to Dr. Engel's Expert Report at pp D-20 – D-22.

<u>Dr. Well's Model</u>: The model used by Dr. Wells is the CE-QUAL-W2 which can be downloaded from http://www.cee.pdx.edu/w2. This was mentioned on p. 5 of Dr. Wells, Expert Report.

All of the files used by Dr. Wells in the model set-up, calibration and scenario runs were provided as part of Dr. Wells considered materials. The files used for modeling were from 3 different computers each of which were doing similar processing tasks. Hence, there may be some duplication among the files. The model includes the model executable, the model source code, all input files, all output files, and all processing programs/codes/procedures used for the input and output from the model.

The specific file names that are responsive to Request No. 1 are: "50yr.zip", "50yrmoratorium.zip", "50yrmoritoriumsod=0.1-0046.zip", "50yrmoratoriumsoddecline0046.zip", "50yrmatural.zip", "97-06 Data.zip", "98-07 Data.zip", "Model_calibration.zip", "model-calib-updates.zip", "Source code.zip", and "W2 Model-updates.zip"

Request for Production No. 2: Please produce all input files used in the Models.

Supplemental Response to Request No. 2:

Dr. Engel's Models:

For the GLEAMS Model the "y:\Engel\Materials\GLEAMS_Final\" folder contains a series of folders (see list below) for model scenarios described in the Dr. Engel's Expert Report. Each scenario folder contains a folder for each of the subwatersheds modeled (Illinois River to Tahlequah, Baron Fork near Eldon, and Caney Creek). Within each of these folders are a series of GLEAMS input files - ".par" files:

- "1.1.FUTURE_100YR" continued poultry waste application
- "1.1.FUTURE_100YR_LanuseChange" continued poultry waste application and hay (no cattle) (data processing not completed and not discussed in Engel report)
- "1.1.FUTURE 100YR NOLitter" poultry waste application cessation
- "1.1.FUTURE_100YR_NOLitter_HRU" poultry waste application cessation
- "1.2.FUTURE_50YR_GrowthPoultry" poultry waste application with growth in poultry industry

"1.4FUTURE_50YR_NOAPPLICATION" - poultry waste application cessation

"2.LAST_50YR_CLEANSOIL" - no poultry waste ever applied and background STP

"2.LAST_50YR_variable Litter"- 1950-1999 poultry waste land application "3.FrancisLake" - continued poultry waste application - results to Lake

"GLEAMS" - supporting input files and data for model calibration

The original data from which all input files were created is still available in the GIS data layers, raw weather files, and Dr. Engel's Expert Report.

For the LOADEST Model: y\Engel\Materials\il_river_note\loadest\LOADEST\' folder contains some of the LOADEST input files to compute P loads (Total and Soluble) at Tahlequah, Baron Fork near Eldon, and Caney Creek. The data in these files was derived from flow and P concentration data in spreadsheets described in Section 9 of Dr. Engels's Expert Report. Due to the large number of input files, some of these were overwritten by Dr. Engel during the use of LOADEST. Thus not all input files may be in this folder. The original data is still available in the spreadsheets referenced in Section 9 of Dr. Engel's Expert Report. Thus, these input files can be created as needed.

The "2input\routing.xls" file contains data for optimizing parameters for the routing equations as set forth in Dr. Engel's Expert Report on page D-22.

Dr. Wells' Model:

The input files are included in each model directory. For example, there are calibration run directories that include all input files for that calibration run. There are also model scenario run directories that include all input files for that scenario run. Again, as an example, the 50-year simulation for the "base" scenario includes all input files for that scenario. These are found in the file named "50yr.zip". For model calibration, the runs are separated into run directories. Therefore, all input files are located within a directory with the title: "Run#". In the zip file, "Model calibration.zip", you will find all the input files for the model run. In order to find these input files, sort by file type. For the CE-QUAL_W2 model all input files use the file type "npt".

The specific file names that are responsive to Request No. 2 are: "1998-07Data(VW).zip", "1998-2007.zip", "50yr.zip", "50yrmoratorium.zip", "50yrmoritoriumsod=0.1-0046.zip", "50yrmoratoriumsoddecline0046.zip", "50yrnatural.zip", "97-06 Data.zip", "98-07 Data.zip", "Model_calibration.zip", "model-calib-updates.zip", and "W2 Model-updates.zip".

Request for Production No. 3: Please produce all output files used in the Models.

Supplemental Response to Request No. 3:

Dr. Engel's Models:

For the GLEAMS model, the "y:\Engel\Marerials\GLEAMS_Final\" folder contains a series of folders for model scenarios (see Supplemental Response to Request No. 2 (above) for list of folders) that are described in the Dr. Engel's Expert Report. Each scenario folder contains a folder for each of the subwatersheds modeled (Illinois River to Tahlequah, Baron Fork near Eldon, and Caney Creek). Within each of these folders are a series of GLEAMS output files (".out" files).

For the LOADEST model, the "y:\Engel\Materials\il_river_note\loadest\LOADEST\" folder contains the LOADEST output files with P loads (Total and Soluble) at Tahlequah, Baron Fork near Eldon, and Caney Creek. Due to the number of output files, some of these were overwritten and/or removed once summarized during the use of LOADEST. These files are readily reproduced from the original data referenced in the Supplemental Response to Request No. 9.

Dr. Wells' Model:

All output files were provided in the same directory as the run directory except for files that were further post-processed. For the calibration models these are included in the zip file "Model calibration.zip" in the subdirectory with the associated Run#, such as "Run147". For the scenario simulations, the output files are found in their respective scenario zip file, such as "50yr.zip" for the base case, "50yrmoritorium" for the cessation case with no change in SOD, etc. All of the scenerios are identified in Dr. Wells' Expert Report. In order to find these input files, sort by file type. For the CE_QUAL_W2 model all output files use the file type "opt".

The specific file names that are responsive to Request No. 3 are: "1998-2007.zip", "50yr.zip", "50yrmoratorium.zip", "50yrmoritoriumsod=0.1-0046.zip", "50yrmoratoriumsoddecline0046.zip", "50yrmatural.zip", "97-06 Data.zip", "98-07 Data.zip", "Model_calibration.zip", "model-calib-updates.zip", and "W2 Model-updates.zip".

Request for Production No. 4: Please produce all computer codes used in the Models.

Supplemental Response to Request No. 4:

Dr. Engel's Models:

For the LOADEST model the source code is provided in the folder "y:\Engel\Materials\il_river_note\loadest\LOADEST\source\" .

For the GLEAMS model the source code is provided in the folder "z:\Engel\Materials\GLEAMS\Model|SourceCode\". The source code for GLEAMS is provided in each of the scenario subwatershed folders (see Supplemental Response to Request No. 2 (above) for list of folders) modified to allow runs for more years.

Dr. Wells' Model:

The model source code is included in the zip file called "source code.zip" and is also found on the Portland State University website: "http://www.cee.pdx.edu/w2 for Version 3.6". The model use Fortran90/95/2000 programming language and the IVF10.1 Fortran90 compiler. For post and pre-processing codes, the Fortrn90 compiler used was the CVF6.6c and the IVF10.1 compilers.

All preprocessing computer codes are in the respective directories where the preprocessing toke place. For example, in the zip file "Temperature inflows from met data.zip" the computer codes are found that were used in the processing of the meteorological data to obtain the input temperature time series. These codes can be found by sorting on the file type "f90".

All post-processing computer codes are in the respective directories where the post-processing takes place. For example, in the analysis of the base case scenario in the file "Tenkiller-postprocessing50yr.zip" the computer codes are in the subdirectory "50yrgrowth" for the growth scenario, etc. Many of the base codes for post-processing the scenarios are in the "50yr" subdirectory and have the file type "f90".

The specific file names that are responsive to Request No. 4 are: "1998-2007.zip", "50yr.zip", "50yrmoratorium.zip", "50yrmoritoriumsod=0.1-0046.zip", "50yrmoratoriumsoddecline0046.zip", "50yrmatural.zip", "97-06 Data.zip", "98-07 Data.zip", "bathymetry.zip", "Boundry Conditions-Processing(VW).zip", "InLake WQ(VW).zip", "input temp time series 10 yr period.zip", "Met Data-Graphs(VW).zip", "met data.zip", "Model Bathymetry_Setup(VW).zip", "Source code.zip", "Temperature inflows from met data.zip", "Model_calibration.zip", "model-calib-updates.zip", "W2 Model-updates.zip", "WaterLevel_Flow Files(VW).zip" and "wq, flow, water level data.zip".

<u>Request for Production No. 5</u>: Please produce all pre-processing computer programs, functions and procedures used.

Supplemental Response to Request No. 5:

Dr. Engel's Models:

The weather pre-processing code is located in "y:\Engel\Materials\GLEAMS\Data\WEATHER_PRE\". No other pre-processing computer programs, functions or procedures were used.

Dr. Wells' Model:

All FORTRAN codes were written in Fortran90/95/2000. Also, macros were developed for Tecplot10 with the file type "LAY"; templates for graphing were developed for the program GRAPHER7 with the file type "GFR". In many of the directories there are also spreadsheets using EXCEL2007 with the file type "XLXS". These files are embedded in the directories where the pre-processing zip took place.

The specific file names that are responsive to Request No. 5 are: "1998-07 Data(VW).zip", "bathymetry.zip", "Boundry Conditions-Processing(VW).zip", "InLake WQ(VW).zip", "input temp time series 10 yr period.zip", "Met Data-Graphs(VW).zip", "Met data.zip", "Model-Setup-bathymetry.zip", "Model Bathymetry_Setup(VW).zip", "Temperature inflows from met data.zip", "WaterLevel_Flow Files(VW).zip" "Boundry Conditions-Processing(VW).zip" "WaterLevel_Flow Files(VW).zip" and "wq, flow, water level data.zip".

<u>Request for Production No. 6</u>: Please produce all post-processing computer programs, functions and procedures used.

Supplemental Response to Request No. 6:

Dr. Engel's Models:

In each GLEAMS scenario and subwatershed folder, there is post-processing code (yearlytp.exe) to compile the GLEAMS model outputs.

Dr. Wells' Model:

All FORTRAN codes used for post-processing are included in the file directories where the model results were post-processed. Hence in the file "model calibration.zip", there is a subdirectory "postprocessing" that includes executables and source codes written in Fortran90/95/2000. Also, included in each directory where post-processing occurred were macros using Tecplot10 with the file type "LAY"; graph templates for using the program GRAPHER7 with the file type "GFR", and EXCEL2007 files with the file type "XLXS".

The specific file names that are responsive to Request No. 6 are: "MODEL Calibration.zip", "Calibration Run Data.zip", "Misc Graphics-Presentations(VW).zip", "Post processing-50-yr(VW).zip", "Post processing-50-yr-runs.zip", "TemperatureModeling(VW).zip", "Tenkiller-postprocessing50yr.zip", and "Updates(VW).zip".

Request for Production No. 7: Please produce all computer programs, functions and procedures used.

Supplemental Response to Request No. 7:

Dr. Engel's Models:

See Supplemental responses to Requests 1, 4, 5, and 6. GLEAMS optimization – code and executables for optimization of GLEAMS parameters can be found in each of the scenario and subwatershed subdirectories is described in the Supplemental Response to Request No. 2. Input parameters were optimized using the automated Shuffled Complex Evolution approach.

Routing equation optimization – code and executables for optimizing parameters for the routing equations is located in "y:\Engels\materials\GLEAMS_Final\Lake\" within subdirectories for each watershed.

The GIS data used are in the "y:\Engel\Materials\GLEAMS\GIS\CoreData\" folder.

Dr. Wells' Model:

See Supplemental responses to Requests 1, 4, 5, and 6.

Request for Production No. 8: Please produce all primary data used for comparison with the Model's input files.

Supplemental Response to Request No. 8:

Dr. Engel's Models:

The GIS data used are in the "y:\Engel\Materials\GLEAMS\GIS\CoreData\" folder.

The weather data used are in the y:\Engel\Materials\GLEAMS\Data\WEATHER\"folder.

Soil attributes from STATSGO are available in "y:\Engel\Materials\GLEAMS\Statsgo\".

Other model inputs and the underlying data are described in Dr. Engel's Expert Report.

Dr. Wells' Model:

Primary data used to develop the model input files are found at: "1998-07 Data(VW).zip", "bathymetry.zip", "Boundry Conditions-Processing(VW).zip", "InLake WQ(VW).zip", "input temp time series 10 yr period.zip", "Met Data-Graphs(VW).zip", "Met data.zip", "Model Bathymetry_Setup(VW).zip", "Temperature inflows from met data.zip", "Model-Setup-bathymetry.zip", "WaterLevel_Flow Files(VW).zip" and "wq, flow, water level data.zip".

Request for Production No. 9: Please produce all primary data used for comparison with the Model's computations.

Supplemental Response to Request No. 9:

Dr. Engel's Models:

USGS flow data for the Tahlequah, Baron Fork and Caney Creek locations are provided in spreadsheets in 9data: Baron.xls - 1997-2006 flow data; Caney.xls - 1997-2006 flow data; Tahlequah.xls - 1997-2006 flow data; Tahlequah_50-present.csv - 1950 through early 2008 flow data; Baron_50-present.csv - 1950 through early 2008 flow data.

Phosphorous concentration data from USGS and OWRB are provided in spreadsheets in 9data: Baron.xls - 1997-2006 flow data; Caney.xls - 1997-2006 flow data; Tahlequah.xls - 1997-2006 flow data.

Dr. Wells' Model:

The files which were compared to model results are located in all post-processing subdirectories referenced in Supplemental Response to Request No. 6. Included in these directories are post-processing programs/macros/templates, model output, and primary field data used in model-data comparisons. Generally, the primary data have the file type "DAT" and "TXT" and are read in by post-processing programs, graphing packages, macros, and templates as described in the Supplemental Response to Request No. 6.

The specific file names that are responsive to Request No. 9 are: "InLake WQ(VW).zip", "Model calibration.zip", "Calibration Run Data.zip", "Post processing-50-yr(VW).zip", "Post processing-50-yr-runs.zip", and "Updates(VW).zip".

I believe these responses provide all the detail needed to identify documents responsive to the Requests, and should be a sufficient guide for an experienced water quality modeler to run the models of Drs. Engel and Wells. As noted above, the modeling files for these experts were not "disaggregated" - they were produced as part of the expert's considered files in the same form as they are found on the expert's computer. Please call if you have any questions.

Page 1 of 3

David Page

From: Bond, Michael R. [Michael.Bond@KutakRock.com]

Sent: Friday, May 30, 2008 4:14 PM

To: David Page; robert.george@tyson.com; Jay Jorgensen

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Subject: RE: Tyson RFP Concerning Modeling Documents

David, per your suggestion on our call on Wednesday I have discussed with our experts what they need with respect to Plaintiffs' Models. First and foremost they need a working copy of each of the Models utilized by your experts. In layman's terms they need the working version of the Models that Plaintiffs' experts actually sat down and used. This is covered under Tyson Foods, Inc. April 17, 2008 Request for Production No. 1.

Additionally the following information must be provided.

- Model code files required to create all model executable files
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- Text files, databases and spreadsheets used for evaluating and presenting results from these postprocessed files

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Page 2 of 3

complete this production.

Michael R. Bond Kutak Rock LLP The Three Sisters Building 214 West Dickson Street Fayetteville, AR 72701-5221 Main Telephone: (479) 973-4200 (479) 695-1946 Direct:

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Tyson RFP Concerning Modeling Documents

Email: michael.bond@kutakrock.com

www.kutakrock.com

From: David Page [mailto:dpage@riggsabney.com]

Sent: Thursday, May 29, 2008 8:12 AM

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Please call if you have any questions.

Thanks, David.

David P. Page Riggs, Abney, Neal, Turpen, Orbison & Lewis, Inc. 502 W. 6th Street Tulsa, OK 74119-1010 918-587-3161

918-583-1549 (fax) dpage@riggsabney.com

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David Page

From: Jorgensen, Jay T. [jjorgensen@sidley.com]

Tuesday, June 17, 2008 12:45 PM Sent:

To: Ward, Liza; David Page

Bond, Michael R.

Subject: RE: Following up on your call

Liza.

I have checked with the other defendants and they agree that the Motion to Compel is well founded. The model-related materials produced by the state do not comply with the plaintiffs' discovery obligations because they are not in a form that is reasonably usable. For that reason, we requested that plaintiffs produce exact copies of the models in the form they are maintained by plaintiffs. We have conferred with plaintiffs on this matter multiple times in an effort to obtain the information that the plaintiffs were required to previously produce. As only one example, during the week of June 2-6 I spoke with David Page on the phone about this several times and asked if plaintiffs would produce the models in the same format they are maintained by the plaintiffs' experts. He refused, stating that such a production is not (in his view) technically feasible because portions of the plaintiffs' models reside on three separate computers.

However, defendants always want to resolve issues without court intervention. It is possible that we will be able to overcome the obstacles created by plaintiffs' production if the plaintiffs provide additional information about your models and the way they are maintained. Would you be willing to answer the following questions? If so, I can commit that defendants will take this information to their experts in an attempt to resolve the uncertainties addressed in the Motion to Compel. If those uncertainties are resolved, we may be able to withdraw the motion:

- What were the different computers (manufacturer, model number, CPU type and operating system) used by Dr. Wells for the calibration and scenario runs described in his expert report?
- What were the FORTRAM compiler options used by Dr. Wells to create the executables for these calibration and scenario runs?
- Was the model executable currently on the Portland State University website: http://www.cee.pdx.edu/w2 (for Version 3.6) the executable used for these calibration and scenario runs?
- There are multiple calibration run directories in the modeling documents produced. Which calibration run directory (e.g., Run 200, 201, 202, etc.) corresponds to the calibration results in Dr. Wells' expert report?

Jay

From: Ward, Liza [mailto:lward@motleyrice.com]

Sent: Tuesday, June 17, 2008 12:02 PM

To: Jorgensen, Jay T. Cc: Bond, Michael R.

Subject: RE: Following up on your call

We still haven't heard anything from you regarding Defendants' position on the State's Motion to Strike. Unless I hear from you by 3 p.m. (Eastern), we will assume that the remaining Defendants share Tyson's position that they object to the relief sought by the State's Motion to Strike and will file the same.

Thanks.

Elizabeth "Liza" C. Ward | Attorney at Law | Motley Rice LLC 28 Bridgeside Blvd. | Mt. Pleasant, SC 29464 | Iward@motleyrice.com o. 843 216-9280 | c. 843 834 2514 | f. 843.216.9450

From: Jorgensen, Jay T. [mailto:jjorgensen@sidley.com]

Sent: Monday, June 16, 2008 12:00 PM

To: Ward, Liza Cc: Bond, Michael R.

Subject: Following up on your call

Liza.

Thanks for speaking with me this morning. To summarize our conversations, you asked whether defendants would be willing to withdraw their motion to compel production of working copies of plaintiffs' models. If not, plaintiffs intend to file a motion to strike. The grounds for the motion are that plaintiffs believe they are still meeting and conferring with defendants on this issue.

I told you I would pass this request on to the other defendants, since the motion was filed on behalf of all of them. I have passed on your



Following up on your call

Page 2 of 2

request, and will let you know as soon as I have received a response from each of the defendants.

Jay

Jay T. Jorgensen | Sidley Austin LLP 1501 K St NW, Washington D.C. 20005 | 202.736.8020

Sidley Austin LLP mail server made the following annotations on 06/16/08, 11:00:24:

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June 18, 2008

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f Counsel enjamin P. Abney . Bryen Henson lavid P. Page eter J. Rogen

Via Email: jjorgensen@sidley.com

Jay T. Jorgensen, Esq. Sidley Austin, LLP 1501 K St. NW Washington D.C. 20005

Re:

Tyson Request for Production of Documents Concerning

Modeling Documents ("Modeling RFPs")

Dear Jay,

This letter is written in response to your recent email of June 17, 2008 (copy attached). There are several errors in your email that need correction.

First, the model – related materials produced by the State did and do comply with the State's discovery obligations under FRCP 26(a)(2) (expert reports) and 34(b)(2) (responses to request for production). I do not understand what you mean when you say the State did not comply with its "discovery obligations because they are not in a form that is reasonably useable." As I hope I made clear in my letter of June 13, 2008 to Michael Bond, the information that was produced to Defendants as part of Drs. Engel and Wells considered materials: (1) included the "documents" (computer files) that were requested by Tyson in the Tyson RFP; (2) were not "diaggregated" (as you claim in the Motion to Compel) and (3) were produced in the same form as they are maintained and used by Drs. Engel and Wells on their computers.

You are also incorrect in implying that our discussions on these topics were complete (so that your obligation to meet and confer was satisfied) and your claim that I "refused" to produce the models in the same format as they are maintained by Drs. Engel and Wells. My recollection of our discussions is that I told you that we were still preparing a detailed, supplemental response to the Model RFPs that would specifically identify which files produced in the Expert's considered materials responded to each

June 18, 2008 Page 2

particular request for production. I also recall telling you that I did not know whether or not we had produced or could feasibly produce the materials as they exist on each of the Expert's computers. But, I don't recall any "refusal" – only that I was still looking into the issue. As it turned out, and as I explained in my letter of June 13, 2008 (first paragraph) and again here, the State did produce the models in Drs. Engel and Wells considered materials as they were kept on their respective computers. What's more, you also have a detailed explanation of the modeling files that were produced that matches the produced files with the individual requests for production. Obviously your Motion to Compel was premature (and, indeed unwarranted). If you had simply allowed me to complete my work responding to your questions you would have seen that all of the information had been properly produced pursuant to FRCP 26 and 34 as part of the Engel and Wells considered materials and that the State's supplemental Response (June 13, 2008 letter to M. Bond) clearly identified which files responded to each individual request for production.

I believe the State has no obligation under Rules 26 or 34 to answer your new questions about Dr. Wells' expert analysis that you pose in yesterday's email. These questions would typically be posed to Dr. Wells in a deposition. However, in the spirit of continued cooperation I have endeavored to secure answers to these additional questions as follows:

Question No. 1

What were the different computers (manufacturer, model number, CPU type and operating system) used by Dr. Wells for the calibration and scenario runs described in his expert report?

Answer No. 1

Dell laptops, one Core Duo 2.2 GHz and one Core2 Duo 2.4 GHz; one desktop Intel core2 duo e7000; Windows XP Pro.

Question No. 2

What were the FORTRAM (sic) compiler options used by Dr. Wells to create the executables for these calibration and scenario runs?

Answer No. 2

Calibration runs:

/nologo/O3/Og/Qparallel/include:"C:\Program files\AnCAD\MATFOR4\include\if9" /real_size:64 /module:"Release\\" /object:"Release\\" /libs:static /threads /winapp /c

June 18, 2008 Page 3

/OUT:"Release\w2_ivf.exe" /NOLOGO /LIBPATH:"C:\Program Files\AnCAD\MATFOR4\lib\if9" /MANIFEST /MANIFESTFILE:"C:\scott\research\corps of engineers\tomcole\w2code\version 36\ivf\win32\w2_code\w2-intel\WinApp1\release\w2_ivf.exe.intermediate.manifest" /SUBSYSTEM:WINDOWS /IMPLIB:"C:\scott\research\corps of engineers\tomcole\w2code\version 36\ivf\win32\w2_code\w2-intel\WinApp1\release\w2_ivf.lib" fml.lib fgl.lib spml.lib

ALSO only for the following subroutines TEMPERATURE, TRANSPORT, WQCONSTITUENTS:

/nologo /O3 /Og /Qparallel /include:"C:\Program Files\AnCAD\MATFOR4\include\if9" /real_size:64 /module:"Release\\" /object:"Release\\" /libs:static /threads /winapp /c /Qopenmp

ALSO only for WATER QUALITY:

/nologo /Og /Qparallel /include:"C:\Program Files\AnCAD\MATFOR4\include\if9" /real_size:64 /module:"Release\\" /object:"Release\\" /libs:static /threads /winapp /c

Scenario runs:

/nologo /O3 /Og /Qparallel /real_size:64 /module:"Release\\" /object:"Release\\" /libs:static /threads /c

/OUT:"Release\fhab.exe" /INCREMENTAL:NO /NOLOGO /MANIFEST /MANIFESTFILE:"C:\scott\research\corps of engineers\tomcole\w2code\NEW code enhancements\fish habitat criterion\fhab\release\fhab.exe.intermediate.manifest" /SUBSYSTEM:CONSOLE /IMPLIB:"C:\scott\research\corps of engineers\tomcole\w2code\NEW code enhancements\fish habitat criterion\fhab\release\fhab.lib"

ALSO only for the following subroutines TEMPERATURE, TRANSPORT, WQCONSTITUENTS:

/nologo /O3 /Og /Qparallel /real_size:64 /module:"Release\\" /object:"Release\\" /libs:static /threads /c /Qopenmp

ALSO only for WATER QUALITY:

/nologo /Og /Qparallel /real_size:64 /module:"Release\\" /object:"Release\\" /libs:static /threads /c

June 18, 2008 Page 4

Question No. 3

Was the model executable currently on the Portland State University website: http://www.cee.pdx.edu/w2 (for Version 3.6) the executable used for these calibration and scenario runs?

Answer No. 3

The model executable on the PSU website was used for the calibration runs. The executables for the scenario runs were included in the run directories for the scenario runs produced in the Wells' considered materials. The source code for the scenario runs was included in the file "source code.zip".

Question No. 4

There are multiple calibration run directories in the modeling documents produced. Which calibration run directory (e.g., Run 200, 201, 202, etc.) corresponds to the calibration results in Dr. Wells' expert report?

Answer No. 4

Run143 was the run used in the Wells' Expert Report.

I trust that this letter satisfactorily explains the situation and that you will immediately withdraw the Motion to Compel. I also suggest that we schedule the Engel and Wells depositions so that any other modeling questions may be expeditiously answered.

Very Truly Yours,

David P Pade

DPP/sdk

Enc.

Case 4:05-cv-00329-GKF-PJC Document 1737-2 Filed in USDC ND/OK on 06/30/2008 Page 42 of 57

June 18, 2008 Page 5

cc: Michael Bond (via email)



Elizabeth C. Ward Licensed in SC DIRECT DIAL 843.216.9280 DIRECT FAX 843.216.9440 LWard@motleyrice.com

June 25, 2008

Via e-mail Only

Jay T. Jorgensen, Esquire Sidley Austin LLP 1501 K St NW Washington D.C. 20005

Re:

State of Oklahoma, et. al. v. Tyson, et. al

Civil Action Number: 05-CV-0329-GKF-SAJ

Dear Jay:

I am writing to follow up on your correspondence of June 17, 2008, where you indicated that Defendants would be willing to consider withdrawing Defendants' motion to compel regarding modeling materials if the State would respond to four questions related to the modeling materials that were produced. On June 18, 2008, the State responded to those questions. Since that time, we have not heard from you on this issue. Moreover, short of re-producing what had previously been produced, upon each request, the State has promptly provided Defendants with responsive information regarding the modeling materials. And yet, the Motion to Compel is still pending. We are perplexed as to why the State is being forced to incur costs associated with responding to a motion that was unripe at the time it was filed and where the subject information has been provided to Defendants. Please let me know by the close of business tomorrow whether Defendants will withdraw the Motion to Compel this week (prior to our response deadline of June 30). Should the State be forced to prepare a response to this motion, please be advised that it will seek its costs incurred in doing so. I look forward to your immediate response.

Lize Ward

Elizabeth C. Ward

cc.: David Page, Esquire

www.motleyrice.com

Motley Rice LLC Attorneys at Law

•

MT. PLEASANT

28 BRIDGESIDE BLVD. P.O. BOX 1792 MT. PLEASANT, SC 29465 843-216-9000 843-216-9450 FAX PROVIDENCE

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PLAINTIFF'S EXHIBIT

HARTFORD

One Corporate Center 20 Church St., 17th Floor Hartford, CT 06103 860-882-1681 860-882-1682 fax

Ward, Liza

From:

Jorgensen, Jay T. [jjorgensen@sidley.com]

Sent:

Thursday, June 26, 2008 12:19 AM

To:

Haubert, Jane M.; dpage@riggsabney.com

Cc:

Ward, Liza

Subject:

RE: State of Oklahoma, et. al. v. Tyson, et. al

Attachments: Jorgensen 06-25-08.tif

Liza,

Thank you for the attached letter. The defendants are still hopeful that the parties can work out their differences on the production of a working copy of plaintiffs' models. Defendants stand ready to withdraw our motion in that event. We would like to avoid burdening plaintiffs or the Court, but we need a working copy of the models on which your experts rely. Your letter notes that David Page has answered some questions about your production of modeling files, but as the following questions demonstrate, there are some discrepancies between the answers David provided and the materials that were produced to the defendants. The fact that plaintiffs struggle to identify the files that make up your models underscores the difficulties defendants have in guessing which files to utilize among the many that were produced.

Would you clarify these issues from David's letter to Michael Bond dated June 13? Also, in light of the ongoing difficulties, would plaintiffs be willing to allow defendants' experts to view your models on your computers as they operate? This may move us past the ongoing confusion over which files are utilized in the models. We believe the court could grant access to the computers that host your models, but we would prefer to avoid involving the Court.

Questions re: Letter from Dave P. Page to Michael R. Bond, June 13, 2008

Supplemental Response to Request No. 2

Mr. Page lists a series of folders contained in the directory y:\Engel\Materials\GLEAMS_final\ that supposedly contain all model input files. The list of folders includes one described as:

"GLEAMS" - supporting input files and data for model calibration.

There is no folder with this name in the y:\Engel\Materials\GLEAMS_final\ directory. This directory does not contain any calibration files at all. There is a folder called "GLEAMS" located elsewhere in the material provided that contains additional model input files, but not in the directory that supposedly contains "final" input files.

The file "2input\routing.xls" is described in the middle of Page 3 and said to contain data for optimizing parameters for the routing equations set forth by Dr. Engel. This file does not exist in any of the materials that we have been provided.

Supplemental Response to Request No. 6

There are no post-processing results provided for the calibration run, as there are for the various scenario runs.

From: Haubert, Jane M. [mailto:jhaubert@motleyrice.com]

Sent: Wednesday, June 25, 2008 01:42 PM **To:** Jorgensen, Jay T.; dpage@riggsabney.com

Cc: Ward, Liza

Subject: State of Oklahoma, et. al. v. Tyson, et. al

The attached letter is sent on behalf of Liza Ward.

Jane M. Haubert | Legal Secretary | Motley Rice LLC 28 Bridgeside Blvd, | Mt. Pleasant, SC 29464

o. 843.216.9417 | f. 843.216.9450 | jhaubert@motleyrice.com



Case 4:05-cv-00329-GKF-PJC Document 1737-2 Filed in USDC ND/OK on 06/30/2008 Page $^{2}_{201}$ 25 of 57

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Ward, Liza

From:

Ward, Liza

Sent:

Thursday, June 26, 2008 4:14 PM

To: Cc: Jorgensen, Jay T.

•••

'David Page'

Subject:

RE: State of Oklahoma, et. al. v. Tyson, et. al

Attachments: 2input.zip

Dear Jay:

I write in response to your inquiry of today's date. First, I must reiterate that the State's experts have produced their materials in the file structures maintained on their computers. Defendants have been provided with all the tools necessary to run the models that are the subject of Defendants' Motion to Compel. The State and its experts strongly object to Defendants' request to access to the computers of its experts. These computers are not dedicated solely to work related to this case and, therefore, contain personal information and unrelated work performed by Dr. Wells and Dr. Engel. The State is confident that the Court would not find this request to be reasonable—especially in light of the State's continued willingness to answer every question posed by Defendants even where such requests were not apparent from pending discovery requests.

Second, with respect to your question regarding the State's Supplemental Response to Request No. 2, you are correct that the calibration files are located in the folder called "GLEAMS". This folder is not a subfolder of y:\Engels\Materials\Gleams_final, but is on the same level as that folder. Again, this is the same file structure as is on Dr. Engels' computer.

Third, I have attached a zip file called "2input.zip", which contains the information that you are seeking. This file was created by Dr. Engel in response to Defendants' inquiries by extracting data from previously produced files. While it is not how Dr. Engel originally maintained this data, he has taken additional steps to allow Defendants to more readily locate the information sought.

Finally, Request No. 6 does not specifically request "post-processing results", and both the State and Dr. Engel are unclear precisely what data you seek. However, if you are requesting post-processing codes, Dr. Engel believes that no automated post-processing codes had been created at this stage in the modeling process and, therefore, none were produced to Defendants.

I trust that all of Defendants' concerns have now been addressed. The State again requests that Defendants withdraw the Motion to Compel by the close of business today. Thank you.

April 10 to 1551 a

Elizabeth "Liza" C. Ward | Attorney at Law | Motley Rice LLC 28 Bridgeside Blvd. | Mt. Pleasant, SC 29464 | Iward@motleyrice.com o. 843 216-9280 | c. 843 834 2514 | f. 843.216.9450

From: Jorgensen, Jay T. [mailto:jjorgensen@sidley.com]

Sent: Thursday, June 26, 2008 12:19 AM
To: Haubert, Jane M.; dpage@riggsabney.com

Cc: Ward, Liza

Subject: RE: State of Oklahoma, et. al. v. Tyson, et. al

Liza.

Thank you for the attached letter. The defendants are still hopeful that the parties can work out their differences on the production of a working copy of plaintiffs' models. Defendants stand ready to withdraw our motion in that event. We would like to avoid burdening plaintiffs or the Court, but we need a working copy of the models on which your experts rely. Your letter notes that David Page has answered some questions about your production of modeling files, but as the following questions demonstrate, there are some discrepancies between the answers David provided and the materials that were produced to the defendants. The fact that plaintiffs struggle to identify the files that make up your models underscores the difficulties defendants have in guessing which files to utilize among the many that were produced.

Would you clarify these issues from David's letter to Michael Bond dated June 13? Also, in light of the ongoing difficulties, would plaintiffs be willing to allow defendants' experts to view your models on your computers as they operate? This may move us past the ongoing confusion over which files are utilized in the models. We believe the court could grant access to the computers that host your models, but we would prefer to avoid involving the Court.

Questions re: Letter from Dave P. Page to Michael R. Bond, June 13, 2008

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Supplemental Response to Request No. 6

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From: Haubert, Jane M. [mailto:jhaubert@motleyrice.com]

Sent: Wednesday, June 25, 2008 01:42 PM **To:** Jorgensen, Jay T.; dpage@riggsabney.com

Cc: Ward, Liza

Subject: State of Oklahoma, et. al. v. Tyson, et. al

The attached letter is sent on behalf of Liza Ward.

Jane M. Haubert | Legal Secretary | Motley Rice LLC
28 Bridgeside Blvd. | Mt. Pleasant, SC 29464
o. 843.216.9417 | f. 843.216.9450 | jhaubert@motleyrice.com

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6/27/2008

Case 4:05-cv-00329-GKF-PJC Document 1737-2 Filed in USDC ND/OK on 06/30/2008 Page 1 of 3

Ward, Liza

From: Jorgensen, Jay T. [jjorgensen@sidley.com]

Sent: Friday, June 27, 2008 3:15 PM

To: Ward, Liza

Cc: David Page; Bond, Michael R.

Subject: RE: State of Oklahoma, et. al. v. Tyson, et. al

Liza,

I have conferred with the defendants and their experts, and we continue to believe that the plaintiffs have not met their obligation to produce working copies of your models. What we have been given is a hodge-podge of electronic files, and we're left to guess how to assemble them (and in what order) to try to recreate the simulations on which many of your experts rely. For the last month we have corresponded with you in an effort to learn which of these files are duplicates, which are drafts or final versions, and in what order they should be assembled to producing operational copies of your models. That's a month of time wasted.

Defendants continue to believe this issue can be resolved without Court intervention. To stop the time-consuming process of back-and-forth discussion on this, we propose to take 1-day depositions of Drs. Engle and Wells in the next two weeks. We ask that they bring computers to these depositions, and that those computers be loaded with the exact same files plaintiffs produced to defendants. Since plaintiffs already produced a copy of these files to us, it should be relatively easy to put the same copy on another computer. This will avoid the concern you raise about defendants accessing your experts' home computers, where they may have files unrelated to this case.

These 1-day depositions will address how your models operate (such as what files are utilized and in what order). By having your experts walk through the process of putting the multitude of files together in the right order, we will be informed how your models work. Then our experts can test the models, and we can schedule follow-up depositions with Drs. Engle and Wells on the substance of those tests.

I think you'll agree that the Court needs both sides to understand how your models operate. It will waste the Court's time if plaintiffs criticize defendants because our experts did not assemble your modeling files in the same manner as plaintiffs experts. When both sides understand your models, we will be able to test them and explain them to the Court.

Defendants always anticipated that two days of deposition would be required for both Drs. Engle and Wells. Perhaps by having one day of deposition for each of these experts early in July, we will be able to reduce the length of the subsequent deposition for each of these experts. We cannot realistically take these subsequent depositions until we have working copies of the models to test and discuss.

Would you provide defendants with dates in the next two weeks when Drs. Engle and Wells can be deposed?

Jay

From: Ward, Liza [mailto:lward@motleyrice.com]

Sent: Thursday, June 26, 2008 04:14 PM

To: Jorgensen, Jay T.

Cc: David Page

Subject: RE: State of Oklahoma, et. al. v. Tyson, et. al

Dear Jay:

I write in response to your inquiry of today's date. First, I must reiterate that the State's experts have produced their materials in the file structures maintained on their computers. Defendants have been provided with all the tools necessary to run the models that are the subject of Defendants' Motion to Compel. The State and its experts strongly object to Defendants' request to access to the computers of its experts. These computers are not dedicated solely to work related to this case and, therefore, contain personal information and unrelated work performed by Dr. Wells and Dr. Engel. The State is confident that the Court would not find this request to be reasonable—especially in light of the State's continued willingness to answer every question posed by Defendants even where such requests were not apparent from pending discovery requests.

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Second, with respect to your question regarding the State's Supplemental Response to Request No. 2, you are correct that the calibration files are located in the folder called "GLEAMS". This folder is not a subfolder of y.\Engels\Materials\Gleams _final, but is on the same level as that folder. Again, this is the same file structure as is on Dr. Engels' computer.

Third, I have attached a zip file called "2input.zip", which contains the information that you are seeking. This file was created by Dr. Engel in response to Defendants' inquiries by extracting data from previously produced files. While it is not how Dr. Engel originally maintained this data, he has taken additional steps to allow Defendants to more readily locate the information sought.

Finally, Request No. 6 does not specifically request "post-processing results", and both the State and Dr. Engel are unclear precisely what data you seek. However, if you are requesting post-processing codes, Dr. Engel believes that no automated post-processing codes had been created at this stage in the modeling process and, therefore, none were produced to Defendants.

I trust that all of Defendants' concerns have now been addressed. The State again requests that Defendants withdraw the Motion to Compel by the close of business today. Thank you.

Elizabeth "Liza" C. Ward | Attomey at Law | Motley Rice LLC 28 Bridgeside Blvd. | Mt. Pleasant, SC 29464 | lward@motleyrice.com o. 843 216-9280 | c. 843 834 2514 | f. 843.216.9450



From: Jorgensen, Jay T. [mailto:jjorgensen@sidley.com]

Sent: Thursday, June 26, 2008 12:19 AM **To:** Haubert, Jane M.; dpage@riggsabney.com

Cc: Ward, Liza

Subject: RE: State of Oklahoma, et. al. v. Tyson, et. al

Liza

Thank you for the attached letter. The defendants are still hopeful that the parties can work out their differences on the production of a working copy of plaintiffs' models. Defendants stand ready to withdraw our motion in that event. We would like to avoid burdening plaintiffs or the Court, but we need a working copy of the models on which your experts rely. Your letter notes that David Page has answered some questions about your production of modeling files, but as the following questions demonstrate, there are some discrepancies between the answers David provided and the materials that were produced to the defendants. The fact that plaintiffs struggle to identify the files that make up your models underscores the difficulties defendants have in guessing which files to utilize among the many that were produced.

Would you clarify these issues from David's letter to Michael Bond dated June 13? Also, in light of the ongoing difficulties, would plaintiffs be willing to allow defendants' experts to view your models on your computers as they operate? This may move us past the ongoing confusion over which files are utilized in the models. We believe the court could grant access to the computers that host your models, but we would prefer to avoid involving the Court.

Questions re: Letter from Dave P. Page to Michael R. Bond, June 13, 2008

Supplemental Response to Request No. 2

Mr. Page lists a series of folders contained in the directory y:\Engel\Materials\GLEAMS_final\ that supposedly contain all model input files. The list of folders includes one described as:

"GLEAMS" - supporting input files and data for model calibration.

There is no folder with this name in the y:\Engel\Materials\GLEAMS_final\ directory. This directory does not contain any calibration files at all. There is a folder called "GLEAMS" located elsewhere in the material provided that contains additional model input files, but not in the directory that supposedly contains "final" input files.

The file "2input\routing.xls" is described in the middle of Page 3 and said to contain data for optimizing parameters for the routing equations set forth by Dr. Engel. This file does not exist in any of the materials that we have been provided.

Supplemental Response to Request No. 6

There are no post-processing results provided for the calibration run, as there are for the various scenario runs.

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From: Haubert, Jane M. [mailto:jhaubert@motleyrice.com]

Sent: Wednesday, June 25, 2008 01:42 PM **To:** Jorgensen, Jay T.; dpage@riggsabney.com

Cc: Ward, Liza

Subject: State of Oklahoma, et. al. v. Tyson, et. al. 1997 (1915)

The attached letter is sent on behalf of Liza Ward.

Jane M. Haubert | Legal Secretary | Motley Rice LLC 28 Bridgeside Blvd. | Mt. Pleasant, SC 29464 o. 843.216.9417 | f. 843.216.9450 | jhaubert@motleyrice.com

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IN THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF OKLAHOMA

STATE OF OKLAHOMA,)	
)	
	Plaintiff,)	
•)	
v.)	Case No. 05-cv-329-GKF(SAJ)
)	
TYSON FOODS, INC., et al.,)	
)	
	Defendants.)	

DECLARATION OF BERNARD ENGEL

- I, Bernard Engel, Ph.D., state the following:
- 1. I hold a Ph.D. in Agricultural and Biological Engineering from Purdue University. Since 1988, I have been a faculty member in the Purdue University Department of Agriculture and Biological Engineering. I am currently Department Head and Professor within this program.
- 2. I have been retained by the Oklahoma Attorney General as an expert witness for the Plaintiff, State of Oklahoma ("State") in the above-captioned litigation. In particular, I prepared an expert report containing my opinions and evaluation concerning the generation and land application of poultry waste within the Illinois River Watershed ("IRW"), and the movement of this waste and its constituents into streams, rivers and groundwater within the IRW and Lake Tenkiller. This report was finalized—and the modeling materials provided—on or before May 22, 2008.
- 3. I provided working copies of environmental models and supporting files as part of my considered materials. The models and supporting files and materials were provided in an identical directory/folder structure as to that on my computers. I did not disassemble these materials. Access to the computers used for this effort would be intrusive and is unnecessary



since the files have been provided as they are stored on these computers. These computers are used for multiple purposes and projects and thus contain personal information and data and information that is confidential to other projects and efforts.

- 3. The common use of the term "model" within the hydrologic/water quality modeling community would refer to the hydrologic/water quality model itself (e.g., HSPF, GLEAMS, SWAT) rather than the model plus input files that have been prepared to characterize a particular situation.
- 4. The models used in reaching the conclusions within my report are typical of the types of models used in hydrologic/water quality modeling of watershed systems such as the Illinois River Watershed. These models consist of an executable model file that uses numerous input files (tens or hundreds of input files in some cases) and produces one or more output files (tens or hundreds of files in some cases). A variety of watershed hydrologic/water quality models are available, including but not limited to those used by me.
- 5. Modification of the equations within the actual watershed model itself when applying a model for the purpose of calculating runoff or phosphorus loads from a watershed would not be standard practice. (I understand, however, that Dr. Wells as developer of the CE-QUAL_W2 lake/reservoir model sometimes modifies his model code when applying it.) Model input files are prepared based on data specific to the watershed of interest. These data files are external to the model itself. Parameters within the model input files are potentially modified during model calibration, but in watershed modeling the model code is typically *not* modified. To model hypothetical scenarios of interest, the model input files are modified to reflect the conditions of the hypothetical scenario. As is the standard practice in watershed modeling, the

equations within the hydrologic/water quality models used in preparing the results in my report were not modified.

- 6. The assumptions and calculations that I used or made *are not hidden* in the computer code. The hydrologic/water quality model that I used has been widely discussed in numerous publications. The model equations were not modified and thus the literature discussing the model describes the model assumptions they are not hidden.
- 7. The peer review process for journal articles and agency reports routinely examines modeling studies or studies in which models play a significant role. In the peer review process, the models are not run by the reviewers at all whether to critique the models, model results, or otherwise. Further, the reviewers do not run the models to examine the effect of each assumption. The reviewers do not run the models at all in performing such reviews.
- 8. Literature that discusses various Illinois River Watershed (IRW) water quality and pollution issues contains significant IRW data and is readily available (state and federal agencies; journal articles; university studies). These studies advance various theories and contain significant data regarding the causes of water contamination within the IRW. This literature has been readily available to the defendants for use in their analysis and modeling of the IRW. As can be discerned from the list of materials I cited in my report, the majority of these reports have been available to the defendants, or any other interested parties, for many years.
- 9. A large amount of data for the IRW is freely and readily accessible from various sources (federal agencies, state agencies, reports). This includes key data for use in hydrologic/water quality modeling within the IRW are readily available and have been available

for many years. These include spatial data as well as other data such as water quality data. As set forth in more detail in Appendix D of my report, these include data such as the following:

- USGS flow data
- USGS P concentrations
- STATSGO soils
- National Elevation Dataset DEM
- National land use data cover
- Point source discharge data
- Weather

Using this publicly available data, the defendants could have created their own IRW hydrologic/water quality model beginning in 2005 when the case was first filed.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Bernard Engel, Ph.D.

Server Engel

June 30, 2008

IN THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF OKLAHOMA

STATE OF OKLAHOMA,)	
)	
Plaintiff,)	
)	
v.)	Case No. 05-cv-329-GKF(SAJ)
)	
TYSON FOODS, INC., et al.,)	
)	
Defendants.)	

DECLARATION OF SCOTT A. WELLS

- I, Scott A. Wells, Ph.D., state the following:
- 1. I am a Professor in Department of Civil and Environmental Engineering at Portland State University. I have a Ph.D. from Cornell University in Civil and Environmental Engineering. My research areas are in modeling of environmental fluid mechanics, with an emphasis on surface water quality and hydrodynamics and solid-liquid separation processes.
- 2. I have been retained by the Oklahoma Attorney General as an expert witness for the State of Oklahoma ("State") in the above-captioned litigation. In particular, I was asked to prepare, and have prepared, an expert report containing my opinions and summarizing my modeling work conducted on behalf of the State.



- 3. The models and the files used in my expert report were part of the considered materials submitted to Defendants along with my report. They were contained in zipped directories downloaded directly from the computers on which the runs took place. These files contain the same information in the same order and form that resides on my computers. The directory structure was kept intact in the zipped files so that by unzipping the directories from a common directory an image of what was included on our computers would be produced.
- 4. It is clear from the questions asked by Defendants related to the modeling work and associated computer files that that they have been able to access information about the modeling.
- 5. I was retained on August 16, 2007 and did not begin work on our modeling effort until late September 2007. My final report was produced on May 29, 2008, or about 8 months after modeling work commenced.
- 6. In a similar time frame, and beginning on or before the date I began, the Defendants' consultants could have initiated and completed an analysis of the ITW system to evaluate the impact of phosphorous loading to Tenkiller Reservoir.
- 7. The Defendants have expressed concern because they cannot identify the source codes used in my modeling work. The original source codes for the modeling program I used in my Report are found on http://www.cee.pdx.edu/w2. [This was stated in my Report and pointed out by Mr Page in his letters to Mr. Bond (6/13/08) and Mr Jorgensen (6/18/08).] The source codes I used in the modeling for my Report are located in my considered materials in the file "sourcecode.zip". (This was also explained in Mr. Page's letters.) Therefore, the modifications I made to the source codes to customize the model to the IRW can readily be detected by a

comparison of these two files. A comparison program can be used to determine any differences between the model source code files.

- Dr. Bierman's affidavit claims that "just looking at Dr. Wells' model, it will take approximately 60 days just to evaluate these scenarios." He based this on my time estimate for running the model (4-7 days) and analyzing the results (2-5 days) multiplied by the number of scenarios (5). But his estimate is only valid if he has just 1 computer available for running the model. If Dr. Bierman had more than 1 computer available to run the model, the time to run the models and analyze the results would be significantly reduced. At times, we were using up to 7 computers to run the scenarios thus speeding up the processing time. If he had just 5 computers all running separate model scenarios, the runs would be completed in 1 week and the analysis could be performed within another week or two depending on how much staff would be available.
- 9. Also, in reviewing a modeling effort of another scientist, generally much less time is required than the time required constructing the model being reviewed. The defendants want 7 more months to review our work this is almost as long as the time that was required for us to construct the model.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Digitally signed by Scott Wells DN: cn=Scott Wells, o, ou, email=drswells@comcast.net,

c=US Date: 2008.06.29 14:07:39 +03'00'

Scott A. Wells, Ph.D.